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## ON THE EXISTENCE OF CANE SUGAR IN CIMICIFUGA.

A contribution from the Chemical Laboratory of the Philadelphia College of Pharmacy.
Read before the Pharmaceutical Meeting, October 18.

By C. S. Gallaher.

During the latter part of the past summer I observed crystals, deposited in a pint bottle of fluid extract of cimicifuga, which were clear, monoclinic prisms, and possessed a sweet taste. The fluid extract was made about one year ago, by the U. S. P. process, from the drug of my own powdering; it is impossible, therefore, that the crystals could have come from anything but the cimicifuga.

On looking over the history of the drug, I found that the crystals, which resembled cane sugar, have not been previously observed, although sugar is incidentally mentioned more than once; so to satisfy my own curiosity, and thinking it might be a subject of interest to the pharmaceutical profession, I brought them with me to the chemical laboratory for identification and further examination.

The following tests were applied:

1. A few of the crystals, after washing with alcohol, were heated with Fehling's solution, but no precipitate occurred.

2. To another portion, after similarly washing with alcohol, hydrochloric acid was added, the mixture boiled, neutralized, and Fehling's solution added; an immediate precipitate of $Cu_2O$ formed.

3. On fusing some of the crystals on platinum foil, the characteristic odor of caramel was developed.

4. By adding concentrated sulphuric acid to a saturated aqueous solution of the crystals, an immediate blackening occurred, and the mixture thickened.

The results of these tests with the physical properties convinced me that the crystals were cane sugar, which might easily have dissolved in the first portion of the menstruum, on account of the moisture in the drug.

This occurrence of cane sugar is of interest because of the varied results gotten by different investigators of this drug, a full history of which is found in Lloyd's "Drugs and Medicines of North America."

In 1861, Mr. G. H. Davis obtained sugar of the uncrystallizable variety. In 1871, Mr. T. E. Conard obtained crystals by a process which, unless very accurately worked, might give crystals of cane sugar, and his product in many ways resembled it. Of the other investigators, some have found crystals and some have not, and J. U. and C. G. Lloyd dismiss the subject, after carefully weighing all the evidence, including the respective reports of Prof. Warder and Prof. Coblentz, with the statement, "We are convinced that cimicifuga does not contain a crystalline proximate principle."

It appears very probable that they by greater care excluded the possibility of cane sugar being present, instead of an active crystalline principle, while the earlier investigators, not taking the same precautions, found crystals and mistook them for a new compound.

While this contribution does not say the crystals found by those who have previously analyzed the drug were cane sugar, it is offered as a suggestion that there is a strong probability such was the case, and that it may serve as a guide to those who in future undertake to further investigate the subject.

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## ANALYSIS OF A CURE FOR CANCER.

By Frank H. Moerk, Ph. G.

Read at the Pharmaceutical Meeting, October 18.

Professor Maisch some days ago handed to me a small package of a powder, stating that he wished I would examine it, as it was said, or, more correctly, known to be a specific for cancer. The information furnished with the sample was, that it was supposed to consist largely of "horse-sorrel." Professor Maisch suggested that it might contain arsenic.

The powder was black in color, but white particles were easily discernible in it.

On treating a portion with warm water, a colorless solution was ob-

tained after filtration, thus indicating the absence of plants or parts of plants. This solution on evaporation and heating failed to char; another indication of the absence of vegetable matter. However, on testing for arsenic, by addition of hydrochloric acid and hydrogen sulphide, a copious yellow precipitate was obtained. The yellow precipitate of arsenite of silver was gotten by the use of an aqueous solution of the powder and silver nitrate with a small quantity of ammonium hydrate.

Insoluble in water and dilute hydrochloric acid was a black powder, now entirely free from white particles, having the appearance and properties of charcoal; on ignition this left only a trace of ash.

Another experiment was made to prove the presence of both carbon and arsenious oxide; this was to introduce a small quantity of the sample into a small bulb-tube, and heating, a metallic mirror and a ring of small crystals formed beyond the part heated.

The sample was now examined quantitatively as follows:

A weighed quantity was dried at 100° C. Loss due to moisture, 0.99 per cent. The residue was digested with three consecutive portions of hydrochloric acid, filtered through a weighed filter and thoroughly washed into a tared beaker. The insoluble portion on the filter consisted of a purified charcoal amounting to 26.07 per cent.

The solution in the beaker was evaporated to dryness, in doing so the arsenious oxide was volatilized, possibly as arsenious chloride. The residue, which was free from arsenic, equaled 10.75 per cent., of which 6.40 per cent. was extractive and 4.35 was ash. The amount of arsenic was taken by difference.

The result of the analysis is that the powder contains

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| Moisture | | 0.99 |
| Charcoal | | 36.82 |
| Carbon | 26.07 | |
| Extractive | 6.40 | |
| Ash | 4.35 | |
| Arsenious oxide | | 62.19 |
| | | 100.00 |

In a number of books examined, I found no mention of charcoal containing or yielding organic matter to solvents, so I thought it of sufficient interest to examine this point. Some willow charcoal was exhausted with dilute hydrochloric acid, and, on evaporation was ob-

tained a residue of a brown color, agreeing with the one gotten in the above analysis. This residue amounted to several per cent., and on ignition yielded a white ash.

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REMARKS BY THE EDITOR.—Years ago we had heard of this cancer cure, but did not succeed in obtaining the powder, until Dr. Pursell placed a small quantity in our hands. The quantitative results obtained by Mr. Moerk's analysis, render it probable that the powder is made by mixing two parts of arsenious acid with one part of wood charcoal, and that the deviation from this proportion is simply the result of the difference in the specific gravity of the two ingredients favoring a partial separation of the heavy arsenic. This proportion gives arsenic far in excess of that contained in the arsenical powders of Swediaur, Cosme, Dupuytren, Pluckett and others. The letter of Dr. Pursell from which we quote below, gives some particulars which are of general interest.

BRISTOL, PA., OCT. 8th, 1887.

The history of this powder is interesting inasmuch as it has undoubtedly cured many cases of epitheliome and other cancerous growths, and now has great reputation in the upper part of New Jersey and eastern Pennsylvania. I am informed that considerable amounts of money have been offered for the secret of its composition but constantly declined. The first case of which I have direct knowledge of its use was in a man over sixty, who had a rapidly growing epitheliome on the lower lip. I had attended the funeral of his brother, who had died from a precisely similar ailment, a few years before, and had but little doubt the result of this would be the same. It, however, was effectually and permanently cured by the application of this powder, the man dying some years laterof another disease. It may be interesting to know that he was a great smoker of a short clay pipe.

A more prominent case is referred to and illustrated in Prof. Gross' Surgery, sixth edition, second volume, page 138. I am very well acquainted with this man, and his disease and treatment. Prof. Gross states he diagnosed the ailment epitheliome; he operated upon it and it returned when (that is before he published the sixth edition), he lost sight of the case. Subsequently, however, this man returned to Prof. Gross, who again removed the growth by the knife, and this time seared the surface with the actual cautery. I saw the patient frequently and the healing process was never completely established. In

a few weeks it became evident the sore was enlarging and getting worse. The powder was applied for about a month, a large eschar separated, healing was induced by emollient applications, the cure was complete and he remains well to this day, although fully five years have elapsed. I could cite a number of other cases, four that I now recall, here in Bristol. I have not known of any case in which the powder has been applied where there has not been a cure; of course, there may be mistakes in diagnosis, but Dr. Gross will hardly be charged with making one.

The mode of application has been to lightly cover the surface with the powder; apply over it, to protect the powder and keep it in place, a piece of *black* silk, somewhat larger than the ulcer and made adhesive by egg albumen. Considerable pain is, of course, produced; but the first application, and all subsequent ones, is allowed to remain until the pain leaves, which will be in five or six days. A new one is then applied in the same way and repeated from time to time until an eschar is detached without force. A poultice of elm bark is applied and the ulcer allowed to heal. It may be the charcoal found by analysis is from *sheep sorrel*, as the person using it was known to collect that plant on different occasions. While the use of arsenious acid for external application has long been made, yet every writer emphasizes the danger in using it where the cuticle is removed, and I imagine most physicians like myself have feared to so use it.

H. Pursell, M.D.

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## LINIMENTUM AMMONIÆ AND OTHER LINIMENTS.

By Joseph W. England, Ph.G.

Read at the Pharmaceutical Meeting, October 18.

It goes almost without saying, that the most popular and generally employed stimulating and rubefacient liniment, both amongst the laity and the profession, is the officinal "*Linimentum Ammoniæ*," or the so-called ammonia or volatile liniment. In many respects, the U. S. P. (1870) formula for its making with its two-thirds volume of olive oil and one-third volume of ammonia water, possessed decided advantages over the very questionable improvements, in the substituting of cotton-seed oil for olive oil, and the decrement in amount of ammonia water, adopted by the last pharmacopœial committee of 1880.

In the first place, as has been shown before, it is impossible to

perfectly emulsify cotton-seed oil by simple agitation with ammonia water, nor for that matter olive oil either; but the latter yields the far better product, although occasionally gelatinizing on standing. Numerous other fixed oils, as the fatty base, have been suggested, such as almond, benne, peanut, sunflower-seed, etc., etc., and, notably, lard oil, by Prof. Remington, at the last meeting of the Pennsylvania Pharmaceutical Association. This last fatty liquid, in its pure state, certainly furnishes a most superior product, but the writer has had difficulty in obtaining a pure commercial lard oil, of unvarying chemical composition, and to this fact is due the excellent qualities of some of the lard oil liniments, and the partial saponification and very quick separation of many others.[1] Again, it is more than suspected that certain commercial makes of lard, and if lard then lard oil, contain cotton-seed oil. The application of "Bechi's test," for detecting the presence of cotton-seed oil in lard oil, is of no value, since lard oil is the only fixed oil known to the writer that reduces that test the same as cotton-seed oil. The best test would probably be the "Elaidin test," or, possibly, its solubility in absolute alcohol which the writer found to be about ten times its weight in the cold-pressed product; but if that same product be previously heated its solubility was diminished.

The following editorial in the Philadelphia *Times*, for September 23, may be of interest as showing the extent of asserted adulteration in this commodity:

"Philip D. Armour, of Chicago, recently made the assertion, when trying to obtain oil at low rates from the Cottonseed Oil Trust, that he consumed in his lard factory one-fifth of the entire cotton-oil product of the United States, or 3,500,000 gallons annually. Mr. Armour sells only pure lard, if his brands are to be credited. The public is thus left to choose which it will believe—that Mr. Armour was lying when he boasted of the use of 3,500,000 gallons of cotton-seed oil, or that the labels on his packages of so-called pure lard are all lies.

"Assuming that Mr. Armour's statement as to the amount of cotton-seed oil used annually at his lard factories is true, the revelation involved as to the ingredients constituting the pure lard of commerce is not without importance. Such methods of business furnish the only justification for legislative interference in the manufacture and sale of butter, cheese, lard, and other articles of daily consumption. The public is entitled to protection against the sale of

[1] Prof. Remington, in his "Practice of Pharmacy" (p. 866), says, concerning the commercial character of lard oil, that "as found in commerce it is almost *invariably adulterated with paraffin oil.* As it is largely employed in lubricating, this admixture is not particularly injurious, but for its principal use in pharmacy as the base of citrine ointment, the presence of the paraffin oil prevents solidification."

one article in the place of another—cotton oil for lard, oleomargarin for butter, glucose for sugar. If the sense of honor of men like Armour is not keen enough to prevent them from perpetrating a fraud of this kind legislation is not wi hout excuse.

"Massachusetts has already passed a law, which goes into effect October 1, compelling all adulterated food products to be sold for just what they are. The act is designed as a protection both to consumers and to honest dealers. If lard mixed with cotton oil can be sold for pure lard, then pure lard becomes an impossibility for the reason that no manufacturer of pure lard can compete in prices with those who manufacture the adulterated article. The same holds true of any article that can be successfully adulterated beyond the power of the ordinary consumer to detect. But what a revelation Mr. Armour's frank admission of his extensive use of adulterants furnishes of the low standard of business honor prevalent among the men who have piled up fortunes in the manufacture of articles of such common consumption as lard, sugar, butter and cheese."

Again, an error has doubtless been made (though small in amount), in reducing the quantity of ammonia water to 30 per cent. The general idea of the profession in using ammonia liniment is not so much to have a nearly neutral saponaceous mixture, but one which will possess, in addition to those emollient features the sharply stimulating qualities arising from an excess of ammonia. Indeed, some physicians go so far, when wishing strongly stimulating effects, as to make their volatile liniment contain one-half strong ammonia water (F. F. F., sp. gr. .933).

The statement has been made that perfect saponification is largely dependent upon the closeness in specific gravities to each other, of the two liquids used. Nothing seems more in error. Olive oil, with a specific gravity ranging between ·915 and ·918, makes an infinitely better mixture with solutions of alkaline hydrates in general, and ammonia water (sp. gr. ·933) in particular, than cotton-seed oil with its specific gravity of from ·920 to ·930; and oil of lard (sp. gr. ·900 to ·920) yields a very much better product than cotton-seed oil; whilst, on the other hand, linseed oil (sp. gr. .936) yields most readily to saponifying influences. So readiness of saponification cannot depend so much upon the specific gravities of the two admixed liquids as it does upon the chemical characters of those constituents, other than that trio of fatty proximate principles—olein, palmitin and stearin, *i. e.*, gum, albuminoids, color, extractive, etc.

Some months ago, while making the so-called *carron oil*, according to the older formula, and noticing the immediate and complete saponification which takes place between the unboiled linseed oil and the solution of lime, that relatively weak alkaline hydrate, the idea sug-

gested itself that an equally good, if not better, ammonia liniment than the usual one, could be had by using ammonia water in place of lime water. Experience, in this case, has sustained theory, and the results yielded are very satisfactory; saponification ensues immediately on simple agitation of the two liquids, but care must be exercised in the selection of the oil, and only the unboiled, officinal, cold-pressed oil should be used, otherwise, the result is a failure since the boiled oil yields a most unsaponifiable preparation.

The U. S. P., 1880, states cold-pressed linseed oil to be soluble in five parts of absolute alcohol. The writer has examined quite a number of commercial makes, and one personally made from flaxseed meal and carbon bisulphide; but in no instance was he able to obtain an oil soluble in less than ten times its weight of Squibb's absolute (99.8 per cent.) alcohol, and when the home-made product was heated its solubility was diminished over 50 per cent. Several dealers have stated that a cold-pressed linseed oil of undoubted purity is readily obtainable in the markets.

The following is the formula used:

Take of

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| Ammonia water (F. F. F.[1]) | 2 f. oz. |
| Lin-eed oil (U. S. P., '80) | 4 f. oz. |

Place the oil in a bottle, add the ammonia water in portions at a time, agitating thoroughly after each addition.

The product formed is a cream-like saponaceous liquid, possessing all the stimulating and rubefacient qualities of those made by the older formulæ, and unlike them does not cake on standing. It acquires, however, on standing a month or two, a yellowish tinge, but its properties remain unaffected. Rubbed on the surface of the body it warmly stimulates, and is quickly absorbed by the skin.

The readiness of cold-pressed, unboiled linseed oil to saponify, even when added to other fixed oils, was also curiously illustrated to me a short time ago. Having some four or five pints of volatile liniment on hand, made by the present pharmacopœial formula with cotton-seed oil, which had separated into several layers, about four fluid-ounces of linseed oil was added to the unsightly mixture and the bottle thoroughly agitated, with the result of complete saponification of all the cotton-seed oil, as well as the added linseed oil. Up to the

[1] The commercial F. F. F., or 20° B., ammonia water, contains 17.5 per cent. $NH_3$ gas.; spec. grav. .933.

present time, which is about two months, a sample of the mixture has remained permanent and shows no sign of separation.

Apropos of the subject of liniments, a change, or, more correctly, a return to the older method in the officinal formula for the *linimentum calcis*, of our present pharmacopœia, is most strongly urged by the writer. As is well known, this emollient and protective emulsionized liquid, used almost wholly for applications to recent and superficial burns, especially in the ulcerative stage, where it acts not only as a protective, but also as an astringent, is directed to be prepared with equal parts of cotton-seed oil and lime water. Now, the same objections, previously mentioned, which apply to cotton-seed oil in the case of *linimentum ammoniæ* apply in a much greater degree to the use of that fixed oil in this instance; especially when we consider the relatively small quantity of calcium hydrate contained in lime water. The old formula for "carron oil," with its one-half linseed oil and one-half lime water, each by volume, is thoroughly recognized and used everywhere, in lieu of the present pharmacopœial product, and the use of that preparation—if indeed it ever obtained a foothold in the profession, which is questioned—has certainly fallen into a state of "innocuous desuetude" and the query naturally suggests itself, Would it not be better for our officinal standard to recognize this time-worn and time-tried formula, whose usage runs the world wide, in place of this inefficient substitute which fails to fulfill its intended object?

Without question, one of the best turpentine liniments of the day is that milk-white liquid, *St. John Long's Liniment.* It has achieved deserved popularity, and when carefully made nothing can be said against it; but there is one feature, in connection with its making, that greatly interferes with its more general employment, and that is the difficulty, at times, of obtaining good eggs, and then, when obtained, of perfectly suspending the very large percentage of oil of turpentine. To obviate this trouble the writer has devised a modified formula, without the use of eggs or acetic acid. Owing to the presence of the excess of stimulating ammonia gas, the volatile oil has been slightly reduced in quantity from the original formula.

Take of

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| Ammonia water (F. F. F.) | 1½ f. oz. |
| Oil of linseed (U. S. P., '80) | 2¾ f. oz. |
| Oil of turpentine q. s. ad | 6 f. oz. |
| Oil of lemon | 30 minims. |

Mix thoroughly in a bottle the linseed oil, with the ammonia water gradually added. Then add, in small portions at a time, the oil of turpentine, shaking after each addition, and then, lastly, the oil of lemon.

The product is a milk-white, thoroughly emulsionized fluid, which separates on standing only after two or more weeks, but can be readily re-united and used after agitation, and compares favorably with that made by the original formula in every way, except that of perfect suspension. It possesses the additional advantage that it can be readily and quickly made, and contains, besides the turpentine, a slight excess of ammonia water, which increases its stimulating qualities.

If this latter feature is not deemed desirable, the liniment can be secured with carron oil (made with lime water), four fluidounces, and oil of turpentine, two fluidounces, using the same general directions as above. When first made the product is a beautiful one, but on standing for a day or two, separation quickly ensues. This need not, however, be taken into account, since after fresh agitation, the liquid remains suspended sufficiently long to use.

One feature of these "soap-liniments," which certainly retards or prevents excessive stimulation and one which seems to have been generally overlooked, is the presence of glycerin, arising from the decomposition of the fatty glycerides in the fixed oil. The presence of this alcohol must have some modifying influence in their application, more particularly of carron oil in promoting the restoration of injured tissues to their normal healthy condition, whilst it seems very reasonable, in the other cases, to assume that excessive stimulation is modified.

In conclusion, the writer would say, that he has found it far more satisfactory in his experience, to make up all these liniments extemporaneously, as they may be called for, in view of the fact that the soap present is not in solution but merely in suspension, and they are most apt in time, no matter what fatty base is used, to cake or solidify on prolonged standing, or separate partially perhaps from some loss of water by evaporation, but largely from deposition of the suspended, undissolved soap. Further oxidation and change of composition ensues, sooner or later, if they are kept in open vessels. Hence, extemporaneous preparation is to be preferred.

## PRACTICAL NOTES FROM VARIOUS SOURCES.

By the Editor.

*Spirit of ether* is a powerful stimulant of secretion, and is recommended by Dr. Auld (*Lancet*) for preventing the disagreeable after-effects of opium; he generally prescribes equal parts of spirit of ether and tincture of opium.

*Antidiabetic pastilles*, containing saccharin, are prescribed by Dr. Fischer (*D. Med. Wochenschrift*, Sept. 1887) as follows: Saccharin, 3·0; exsiccated sodium carbonate, 2·0; mannit, 50·0 gm. These quantities are for 100 pastilles, one of which is used for sweetening a cup of coffee, tea or cacao.

*Naphthalin pills* are covered by Bernbeck (*D. Mediz. Zeitung*, May 1887) with elastic collodion in preference to keratin. A good formula for the pills is: Naphthalin, resublimed, 10·0; powdered althæa, 5·0 gm., and sufficient mucillage to make 100 pills. The pills require to be dried for several days, until they crumble under pressure of the fingers, without flattening, when they may be coated with collodion, which will dissolve only in the lower bowels.

*Nutrient enemata* are recommended by Dr. Ewald (*Therap. Monatshefte*) to be prepared by mixing three or four eggs with four or five ounces of a solution containing from 15 to 20 per cent. of glucose. Mucilage of gum or of starch may be added, and, if required, a few drops of tincture of opium. Such an enema should be given only after the bowels have been well emptied, for which purpose an injection of luke-warm water or solution of table salt may be used.

Another form of enema is made by beating together two or three eggs with a tablespoonful of cold water and a little starch, adding a teacupful of 20 per cent. solution of glucose, heating the mixture gently, so as not to coagulate the albumen, and stirring in a wineglassful of red wine. Peptones may likewise be used in addition to, or for replacing the eggs. An enema of eight or nine ounces is preferably given in two or three doses.

*Suppossitoria peptoni* have been used by Dr. Sauter. They contain 1·6 gm. (gr. xxv.) of peptone and sufficient cacao butter. They require to be kept in a cool place to prevent rancidity. Adults use two suppositories three or four times a day, an enema being previously used.

*Huchard's aperitive tincture.*—Tinct. rhei, 10 gm.; tinct. nucis

vomicæ, 6 gm.; tinct. illicii anis., 4 gm.; mix. Take ten drops in half a glass of water about ten minutes before each meal.

*A disinfectant and deodorizing powder* for old excavated ulcers is recommended by Barbocci to be prepared from equal parts of animal charcoal and powdered camphor.

*Unguentum acidi borici.*—Melt together yellow wax one part and benzoated lard six parts, and rub together with boric acid one part, previously triturated into an impalpable powder with a few drops of alcohol.—*Can. Pract.*

*Antiseptic powder.*—Lucas-Championière (*L'Union Méd.*) uses for wounds an intimate mixture of equal parts of iodoform, cinchona, benzoin and magnesium carbonate, each article to be finely powdered and sifted; oil of eucalyptus is added to the mixture.

*Corrosive sublimate paper* is prepared by saturating filtering paper with a solution containing 2 per cent. of mercuric chloride and 5 per cent. of glycerin, and drying. This paper is used in layers of two to eight as an antiseptic dressing for wounds.

*Non-irritating antiseptic solution.*—Prof. R. Lépine uses the following liquid for washing wounds, the powerful antiseptic action being due to a number of compounds, of which each is present only in very small quantity: Corrosive sublimate, 1 milligm.; phenol., 0·10; salicylic acid, 0·10; benzoic acid, 0·05; chlorinated lime, 0·05; bromine, 0·01; acid bromhydrate of quinine, 0·20; and water, 100 gm. *Prat. méd.*, June 14, 1887.

*Preparation of aseptic sponges.*—The following is an outline of the process recommended in *Vereinsblatt pfälzischer Aerzte.* Select sponges with medium sized pores; dry them well by heat; remove sand by beating; wash upon a sieve until perfectly clean; immerse for two hours in solution of potassium permanganate (1 : 1000), mixed with hydrochloric acid; wash repeatedly with water until free from acid reaction; immerse for twelve hours in solution of corrosive sublimate (1 : 1000); wash repeatedly with distilled water; dry in a room free from dust, and preserve the sponges in tightly closed vessels.

*Salol preparations.*—A. Nicot gives (*Bull. gén. de Thér.*, Sept. 15, 1887, p. 219) a number of formulas for the internal and external use of salol, from which the following are selected:

*Tablets of salol.*—Tragacanth, 1; gum arabic, 3; water, 10; salol, 25; and sugar, 60 gm.; mix, add oil of lemon, 5 drops, and divide into 100 tablets.

*Collodion of salol.*—Dissolve salol, 4 gm. in ether, 4 gm., and add elastic collodion, 30 gm. Used for chapped skin.

*Liniment of salol.*—Olive oil, 60; salol, 10; lime-water, 60 gm. Used as an application for burns.

*Suppositories of salol.*—Cacao butter, 40; white wax, 3·5; salol, 10 gm.; for 10 suppositories.

*Dentifrice elixir; salol mouth-wash.*—Salol, 3; alcohol, 150; oil of star anise, 0·5; oil of geranium, 0·5; oil of peppermint, 1·0 gm.

*Jelly of spogel seed.*—One part of the seeds of Plantago Ispaghula, *Roxb.*, yields with 20 parts of water a tasteless jelly, which is preferable to the jelly of quince seed, and is particularly useful in diarrhœas. The entire seeds are also given internally; they swell considerably from the absorption of moisture, and in the large intestines give off a quantity of thick mucilage.—*Jour. de Méd. de Paris*, Sept. 4, p. 329.

*Linimentum mentholi.*—Menthol, 5 parts; olive oil, 45 parts; and lime-water, 50 parts.—*Rundschau, Prag.*

*Tinctura saponis viridis.*—Dr. Unna uses this formula: green soap, 100; strong alcohol, 50; and oil of lavender, 0·2 parts. This forms a convenient vehicle for the external application of chloroform, oil of turpentine, tar, benzol and ether, of which equal parts may be dissolved in the solution. At the temperature of the body the tincture will dissolve 40 per cent. of carbon bisulphide.

*Oil of sassafras* is stated by C. E. Dodsley (*Brit. and Col. Drug.*) to completely mask the odor of *iodoform*, for one ounce of the latter only four drops of the oil being required.

*Detection of nitrobenzol in oil of bitter almonds.*—2 cc. of the suspected oil are well shaken with 34 cc. of 45 per cent. alcohol. Pure oil of bitter almond will dissolve completely; but nitrobenzol or mirbane oil will gradually subside from the liquid in the course of twenty-four hours.

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**Caustic Paste of Jules Felix.**—Mix in a mortar the following substances in powder: Starch, 37 parts; wheat flour, 112 parts; bichloride of mercury, 1 part; dry chloride of zinc, 110 parts; iodol pure, 10 parts; croton chloral, 10 parts; monobromated camphor, 10 parts; crystallized carbolic acid, 10 parts. Then add gradually a sufficient quantity of distilled water to form a homogeneous paste without lumps of the consistence of putty. This paste will keep an indefinite length of time.—*Lancet*, August 6, 1887.

## ABSTRACTS FROM THE FRENCH JOURNALS.

Translated for the AMERICAN JOURNAL OF PHARMACY.

THE SUGAR TREE, or *mahwa*, of Hindostan, *Bassia latifolia, Roxb.*, was stated some months since by the scientific press to be capable of producing 200 kilos of sugar annually. Recent analyses, however, show it to possess an insignificant quantity of sugar. The results give: honey, 42·03; cane sugar, 1·04; ash, 2·32; cellulose, etc., 42·20; water, 12·41=100. Such sugar can be used only for making alcohol, and the Hindoos use the flowers for that purpose. (See analysis by Prof. Church in AM. JOUR. PHAR., 1886, p. 250).

TERPIN is so often prescribed (M. Vigier, *Arch. de Pharm.*, Oct. 5), in doses of 1 to 2 gm. *per diem*, that he thinks the elixir of Garus, of which a tablespoonful will dissolve but 25 cgm., should be replaced by one of the following preparations: terpin, 50 cgm.; alcohol 95 per cent., 2 gm.; glycerin of 30° B., 4 gm. This keeps indefinitely, its amount of alcohol is small, and its doses divide nicely into teaspoonfuls. An elixir containing 50 cgm. of terpin to the tablespoonful may be made as follows: terpin, 50 cgm.; glycerin, 7 gm.; alcohol 95 per cent., 7 gm.; honey, 7 gm.; vanillin, 2 mgm. Honey is preferable to simple syrup, because it does not form crystals, and the vanillin gives the preparation an agreeable flavor.

THE STINGS OF INSECTS may be properly treated by the intelligent pharmacist without laying him open to the imputation of being "a counter prescriber." Dr. Tillot, (*Jour. de méd et de chir. prat.*, Sept.) proposes that these painful lesions, whether caused by bees, wasps, gnats, ants, or other insects, be treated with a strong solution of cocaine applied on cotton held in place with a bandage. The pain ceases at once, and there is no tumefaction. M. Tillot reports success in "a large number of cases."

SUPPOSITORIES are easily and quickly made by a process proposed by M. Leboutte in the *Jour. de Phar. et de Chim.* for September. The cacao butter in thin slices is bruised in a mortar with the medicaments, to which are added a small quantity of medicinal soap and a few drops of water. The mass readily becomes homogeneous, and the suppositories retain the necessary consistency.

ANTROPHORES DE FRANCKE.—The various compositions used in this species of medicated bougie, which has the excellent qualities of suppleness and elasticity, united to the rigidity necessary for use in tortuous canals and fistulas, are thus given in the *Jour. de Phar. d' Als.-*

*Lorr.* One contains 4 per cent. of boric acid; one has 2 per cent. sulphate of copper; one, 5 per cent. of sulphate of thalline; one, 5 per cent. of sulphate of zinc; three have, respectively, 30, 5 and 2 per cent. of iodoform, and others contain from 2 to 5 per cent. of hydrochlorate of cocaine. The base is formed of a mixture of gelatin and glycerin. The medicated mass is supported by a wire spiral in its centre, the coils of which lie closely together; the composition is massed around this spiral, to which it readily adheres until dissolved in the passages into which it has been introduced. The bougies are made of 7, 10 and 14 cm. in length, and those for catarrh of the prostate are 22 cm. Bougies for the latter purpose are covered only to the extent of 2 cm. The mass used for this purpose contains 2 per cent. nitrate of silver and 5 to 10 per cent. cocaine. Cocaine antrophores are used to deaden the pain likely to be felt from explorations of the urethra. Those of sulphate of zinc, thalline or resorcin are used for blenorrhagia. For catarrh of the cervico-uterine canal the bougies of 2 per cent. nitrate of silver or 30 per cent. of iodoform are found excellent. Fistulæ and urethral chancres are best treated with the 30 per cent. iodoform, or 3 per cent. phenic acid antrophores.

ACETO-PHOSPHATE OF COPPER IN TUBERCULOSIS.—The sulphate of copper, long employed in this disease, fell into disuse on account of the gastric troubles caused by it. Dr. Luton (*Rev. de clin. et de thérap.*, September 8), wishing to make use of copper in this affection on account of its parasiticidal properties, first tried the phosphate, but this being insoluble, he now administers, concurrently, the acetate of copper and the phosphate of sodium. The double decomposition augments, so he believes, the activity of the medicament. He gives pills, potions and hypodermic solutions. For pills he uses neutral acetate of copper, 1 cgm.; crystallized phosphate of sodium, 5 cgm.; liquorice and glycerin q. s.—the latter to prevent hardening. The salts must be dried and mixed before making the pilular mass, an addition of water being indispensable to the reaction. Or, a small pill of acetate of copper may be made, and afterwards rolled in pulv. phosphate of sodium. The potion contains: of the cupric acetate, 5 cgm.; phosphate of sodium, 50 cgm.; mucilage, 125 gm. Or, each of the chemicals may be made with one-half of the menstruum and given separately at the same time, thus permitting the reaction to take place in the stomach. For hypodermic injections the mixture is: phosphate of copper (recently precipitated), 1 gm., and pure glycerin with dis-

tilled water, 5 gm. According to the writer, the copper in these mixtures plays the part of a "specific," whilst the phosphorus is a "dynamizing agent."

BICHROMATE OF ANILINE, according to Girard and L'Hote, (*Arch. de Pharm.*, October 5), may be produced in well-defined crystals, as follows: Two saturated solutions are prepared, one of hydrochlorate of aniline, and one of bichromate of potassium, sodium, ammonium or calcium. The solutions, in equal volumes, should be mixed while very cold. Very numerous yellow crystals are thus formed which are then freed with water from all traces of alkaline chloride, and dried *in vacuo*. The substance thus obtained is found by Girard and L'Hote to have the formula $C^{12}H^4(NH^3)2CrO^3$. This bichromate of aniline is sparingly soluble in cold water (about 4 to 1000) and is decomposed by boiling water. It is slightly soluble in alcohol which it slowly transforms into aldehyde. When dry it undergoes no change; when moist it changes greatly under the influences of light and air. It decomposes under slight elevations of temperature, and burns in contact with flame or under the stroke of a hammer. It inflames also in contact with fuming nitric acid; with sulphuric acid it burns like pyrophoric copper. Treated with cold water it gives rise to violet tints; treated with hydrochlorate of aniline and aniline in excess similar colorations are obtained. The authors' purpose is to study the coloring matters resulting from these changes.

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## GLEANINGS FROM THE GERMAN JOURNALS.

By JOHN A. MARTIN, PH.G.

*Tannin with sodium bicarbonate.*—A mixture somewhat like the following: Tannin acid, 3; water, 180; solution of sodium bicarbonate, sufficient for perfect neutralization, is often prescribed in Germany, and, according to *Pharm. Ztg.*, generally a stumbling-block, on account of it soon changing to a dark color, particularly when there is an excess of alkali. To make it remain uniform for a long time, expel the excess of carbonic acid in sodium bicarbonate solution by boiling, and the tannin solution, diluted as much as possible (in proportion of sod. bicarb., 1; tannic acid, 5) is added to the former, after cooling. (*Rundschau*, 1887, p. 447).

*Effect of alcohol on pepsin.*—To determine the question whether

alcohol exerts any influence on the digestive power of pepsin in solution, Bardet made a series of experiments, showing that the percentage of alcohol present in solution plays an important part. The presence of 20 per cent. had no influence on the digestive power, but it was very visibly decreased by a larger amount, and entirely destroyed when the amount reached 80 per cent.; thus prescribing pepsin in combination with wine is entirely rational, but combinations of pepsin with tinctures must be avoided.—*Pharm. Ztg.*, 1887, p. 398.

*Test for castor oil.*—Finkener (Mittheil. d. kgl. techn. Vers. Stat. zu Berlin, IV, 141, *Zeitschrift f. Anal. Chem.*, 1887) gives the following: Pure castor oil agitated with 5 volumes alcohol sp. gr. 0·829, at normal temperature (15° C.), forms a clear solution, but if the suspected oil contains only 10 per cent. of other fat oils, as olive, sesame, rape, cotton, or linseed oil, the solution becomes turbid and does not clear at 20° C., the undissolved oil settling to the bottom.—*Pharm. Centralhalle*, 1887, p. 294.

*Extract of may bells* (*lily-of-the-valley*).—Extract jasmin, 100 gm.; extract ylang-ylang, 25 gm.; cardamom seed, 5 gm.; oil of orris-root, 100 drops. Should the odor of cardamom predominate, increase the amount of extract of ylang-ylang.—*Drog. Ztg.; Rundschau, Prag*, 1887, p. 431.

*Phenol-cocaine*, prepared by gently heating phenol 1, with cocaine 2, is, according to Viau, in *Nouv. Remèd.*, recommendable as a powerful local anæsthetic, and worthy of a trial for toothache. For this purpose it can be prepared extemporaneously by dissolving 0·03 cocaine pur. in 50·0 of a 2 per cent. solution carbolic acid.—*Rundschau, Prag*, 1887, p. 448.

*Discoloration of lithium salicylate solution.*—Julliard (*Bullet. Commerc.*, 1887, June), relates an interesting experience with lithium salicylate. He dispensed an aqueous solution, made by carefully neutralizing lithium carbonate with salicylic acid obtaining a colorless solution, but in a few days the solution was returned, having changed to a coffee-brown color. Colorless and unchangable solutions were obtained from several commercial samples of lithium salicylate; but nearly all had a weak acid reaction and contained sodium compounds. The estimated amount of salicylate of sodium present was 12 to 15 per cent. The question arose whether the salicylate of sodium or the free salicylic acid prevented the discoloration, and he found that this favorable effect is produced by free salicylic acid, even when present

only in small amount, thus again confirming the experience for years with salicylate of sodium, that preparations of salicylates to remain colorless, must contain a small amount of free salicylic acid.—*Pharm. Zeitg.*, 1887, p. 423.

*Iodol collodium.*—According to A. Bilteryst (*Jour. de Pharm. d'Anvers,*) a 10 per cent. iodol collodium is prepared as follows:

| | |
|---|---|
| Iodol | 10 gm. |
| Alcohol | 16 " |
| Ether | 64 " |
| Gun cotton | 4 " |
| Castor oil | 6 " |

Dissolve the iodol in the alcohol and ether previously mixed, add the gun cotton in small portions, and after complete solution add the castor oil. The percentage of iodol can of course be increased to any desired amount.—*Pharm. Ztg.*, 1887, p. 488.

*Aquarium cement.*—Litharge, fine white sand, gypsum, each one kilo; finely powdered rosin, 350 gm. Carefully knead into a paste with linseed oil, varnish and a small quantity of dryer. It is fit for use in a few hours, and answers equally well for salt or fresh water tanks.—*Ph. Centralhalle*, 1887, No. 22.

*Remedy for loose teeth.*—Quincerot recommends the following mixture: Tannin, 8 parts; potassium iodide, 1 part; tincture of iodine and tincture of myrrh, each, 5 parts; rose water, 200 parts. Teaspoonful in luke-warm water, as a wash for rinsing the gums in the morning.—*Pharm. Centralhalle*, 1887, p. 398.

*Tar troches without sugar.*—Mayet, (*Journ. de Ph. et de Ch.*, 1887, I, 491, gives the following: Norwegian tar, 2 gm.; sodium bicarb., 18 gm.; calcium phosphate, 18 gm.; oil of anise, 5 drops. Make 100 troches. Each contains 0·02 of tar.—*Phar. Zeitung*, p. 305.

*Preservation of aromatic waters*—To prevent the mouldy smell and taste and loss of aroma, which follow when aromatic waters, particularly rose and orange-flower water, are kept in the cellar for some time, E. Kraft recommends the cork of the container to be provided with a small opening, 1 mm. wide, in the centre, to admit the atmospheric air. Medicated waters kept in this way will never spoil.—*Phar. Zeitung*, p. 311.

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**Stains of Iodine.**—Sulphide of sodium, or sodium sulphydrate, in a ten or twenty per cent. watery solution, applied upon a compress, will remove the stain of iodine from the skin and allay its irritant action when excessive.—*Philadelphia Medical Times.*

# PHARMACEUTICAL NOTES ON SOME SYNTHETICAL COMPOUNDS RECENTLY INTRODUCED INTO MEDICINE.[1]

By. H. Helbing, Apotheker of the German Hospital, London.

The remarkable increase in the number of organic compounds contained in the materia medica, which recently has been even much more rapid than formerly, may be taken as a reliable indication of the progress made by the chemistry of medicine in later years.

When we remember that before the commencement of this century the separation of active principles, like morphine or quinine, from the raw drug was unknown, we cannot restrain from admiration of the vast number of synthetically prepared remedies which have since been introduced, and of which the greater part is of quite recent origin.

In attempting to place before you an account of a number of these modern improvements, I have paid special regard to the pharmaceutical side of the question and have avoided lengthy formulæ, or the minute details of preparation, as also chemical reactions. I have confined myself to giving in alphabetical order a description of certain antipyretics, antiseptics and soporifics, together with suitable combinations and preparations of them. Details are also given of the nature, solubility and therapeutic value of these remedies, besides a few hints which may be found to be of use in dispensing. I also note the melting and boiling point of each, as these are of great importance in determining the purity of the preparation; indeed they supply the chemist with ready means of testing the article for himself at once.

*Acetphenetidin*, Paracetphenetidin, $NH(COCH_3)C_6H_4.OC_2H_5$. This antipyretic has only been in use for a short time, but the results hitherto obtained with it are described as excellent. Hinsberg and Kast have shown that a dose of 3 to 8 grains is able to reduce the temperature of the human body by 3·6° F., and the experiments carried out in the clinic of Professor von Bamberger, of Vienna, have only tended to confirm the favorable accounts of the discoverers. It appears to be perfectly devoid of secondary effects, and fully able to bear comparison with all other febrifuges.

It is a grayish-white crystalline powder without smell, producing a slightly pungent after-taste; it is practically insoluble in water, but dissolves readily in alcohol. The melting point is at 275° F. It is advan-

[1] From a paper read before the British Pharmaceutical Conference; reprinted from *Phar. Jour. and Trans.*, Sept. 24, 1887, pp. 263–265.

tageously prescribed in the form of powders containing the above-mentioned dose, since from its tastelessness it is readily taken by patients.

*Amylene hydrate.*—Tertiary amylic alcohol, dimethyl ethylcarbinol,

$$\begin{matrix} CH_3 \\ CH_3 \\ C_2H_5 \end{matrix} > C.OH.$$

Only a few weeks ago this compound was recommended by Professor Jolly and von Mering as a soporific, in which class of remedies it appears to have taken a prominent place. Before applying it to patients, numerous experiments on animals had been carefully carried out. A dose of ʒj. is sufficient to produce sleep for six or eight hours. No unpleasant secondary effects are recorded.

The remedy is given in water (in which it is soluble in the proportion of 1 : 12) with a little juice of liquorice.

Amylene hydrate.
Liq. glycyrrhizæ.....āā ʒj.
Aq.....ad ℥j.
Sig.—To be shaken before use.

It is also administered in capsules of gelatin.

It is a clear fluid with an odor reminding one slightly of camphor; it is soluble also in alcohol. Specific gravity 0·812 at 53·6° F. Boiling point 216° F.

*Antifebrin*, acetanilide, phenylacetamide, $C_6H_5NH.CH_3CO$. Since the first experiments with this valuable remedy, performed by Drs. Cahn and Hepp, in Strasburg, antifebrin has been carefully studied by others, and with the same satisfactory results. It possesses the advantages over other remedies of this class of being low in price, and moreover the dose is small; 2 to 10 grains once, twice, or, at most, three times a day sufficing to produce a considerable reduction of temperature in cases of typhoid fever, pneumonia, also in erysipelas and acute rheumatic gout. It is given in powders as well as in solution; for the latter mode of administration it will be found most advisable to dissolve it in brandy, subsequently adding a little water and syrup. The following formula is given as an example:—

Antifebrin..... ʒj.
Brandy..... ℥ ivss.

Dissolve and add—

Distilled water,
Simple syrup.....of each ʒ vj.

One tablespoonful to be taken as directed.

The remedy is thus rendered very pleasant to take, and the patients express no aversion to it.

A good preparation should be of pure white color, and form moderately large crystals, which are but very sparingly soluble in cold water, rather more readily in hot, and easily in alcohol; antifebrin melts at 233·6°, and boils at 563°.

*Antipyrin*, oxydimethylchinizine, $C_{10}H_9CH_3.N_2O$.—Antipyrin may fairly be considered the most popular of modern antipyretics. The dose varies from 15 to 30 grains twice, three or more times a day. For children 3 to 12 grains will be found to be sufficient. It is of great value in all febrile diseases, reducing temperature very promptly. Of late it has also been applied in subcutaneous injection as a local anæsthetic. In some cases a bright pink rash, like nettle rash, will suddenly appear during treatment; this is considered to be of no importance, as it causes no inconvenience and soon disappears.

Antipyrin is readily soluble in water and alcohol; it possesses but little flavor, and that not unpleasant; and is, therefore, adapted for administration in solution. It thus possesses great advantages over quinine, especially in treating children, who take it very readily if mixed with a little syrup, thus:—

| | |
|---|---|
| Antipyrin | 80 gr. |
| Simple syrup | ℥j. |
| Water, add to | ℥iv. |

Two teaspoonfuls for a dose.

This mixture is almost free from bitterness, and children do not at all object to it.

It crystallizes in colorless laminæ, which melt at a temperature between 230° and 235·4° F.

*Antithermin*, phenylhydrazinlevulinic acid,

$$CH_3C(C_6H_5N{-}NH)CH_2{-}CH_2COOH.$$

—has been recommended as a febrifuge, but although it is now obtainable in the market, details are still wanting as to dose and effect. It forms large colorless crystals of a slightly bitter taste, which cause an unpleasant grating when ground between the teeth. It is insoluble in water, and but sparingly soluble in alcohol. The most suitable form for administering antithermin is the pilular.

*Aseptol*, acidum sozolicum, orthophenolsulphonic acid,

$$C_6H_4OHSO_2OH.$$

By aseptol we understand a 33⅓ per cent. solution of orthophenolsulphonic acid. It is almost odorless, but faintly suggests carbolic acid, and is reported to possess the antiseptic properties of this latter antiseptic and of salicylic acid, standing, as regards strength, midway between them. Its superiority lies in the possession of antiseptic without poisonous or irritating properties, so that it is especially adapted for abdominal surgery and for ophthalmological operations. Sozolic acid is readily soluble in water, alcohol and glycerin. It is applied in a solution of 3, 5 or 10 per cent., to which strength the stronger solution can be reduced by dilution with water.

*Betol*, salicylate of $\beta$ naphthol ether, $C_6H_4OH.COO.C_{10}H_7$.

This remedy is one of the very newest, and analogous to salol. It is applicable therefore in all those cases in which this latter is found to be of use, *viz.*, rheumatism, cystitis, etc. The dose is given as 5 to 8 grains in some cases of intestinal catarrh. As it is not a phenol compound, betol possesses the advantage of being freer from detrimental properties than salol.

It forms small, white, resplendent crystals, is almost devoid of taste, and being insoluble in water is best dispensed as a powder or in compressed tablets, or in pills made up with liquorice juice and powder, each containing 2½ grains of betol. It is soluble in alcohol, as also in fatty oils, and is therefore well adapted for being worked up with butter of cacao into pencils for the treatment of gonorrhœa. These may be prepared by melting four parts of ol. theobromæ, and adding to the warm liquid one part of betol. This readily dissolves in the fat and the mixture is allowed to partially cool, when it is poured into moulds. The finished product contains of course 20 per cent. of betol.

The melting point of betol is 203°.

*Hypnon*, acetophenon, $C_6H_5COCH_3$.

By means of 3 to 8 grain doses of this very powerful soporific a profounder sleep is produced than that caused by chloral hydrate. Hypnon possesses an agreeable aroma somewhat resembling a mixture of oil of bitter almonds and neroli, but its action on the mucous membrane of the mouth is almost caustic. It is dispensed therefore in capsules of gelatin, each of which contains 1 grain of the remedy combined with 10 of almond oil to prevent any risk of unpleasant effects.

It is a colorless fluid, sparingly soluble in water, more readily so in

alcohol, of the specific gravity 1·032 at 59° F., the boiling point being 410° F.

*Methylal*, dimethylether of methylene, $CH_2(O.CH_3)_2$.—Methylal is a soporific of very recent date. It is administered in doses of 20 to 25 grains in water, with a little syrup.

Thus:—

| | |
|---|---|
| Methylal | ℥j. |
| Syr. orange flower | ℥ss. |
| Water | ℥j. |

One tablespoonful for a dose.

It has also been applied externally as a local anæsthetic dissolved in oil, or as an ointment, with lard as a base. Both forms are made to contain 15 per cent. of methylal.

It is a colorless ethereal fluid which smells like a mixture of chloroform and acetic ether, and tastes pungent and aromatic; it is readily soluble in water as well as in alcohol; the specific gravity at 59° F. is 0·855; it boils at 107·6°

*Naphtalin*, $C_{10}H_8$.—To most fungi naphtalin has been found to be a powerful poison, and has proved very valuable as an antiseptic, being applied in the same manner as iodoform. Professor Rossbach, of Jena, first administered it internally in cases of acute and chronic enteric catarrh, in typhoid fever and acute gastro-intestinal catarrh. It has since been extensively applied, but not with absolutely uniform results. It is given as a powder in wafer in doses of 2 to 8 grains, to which a drop of oil of bergamot is added to obliterate the peculiar smell of tar belonging to it, which makes it otherwise impossible for some patients to take it. For example the following formula may be adopted:—

| | | |
|---|---|---|
| Naphtalin. | | |
| Sacch. alb | āā | 30 gr. |
| Ol. bergam | | 1 gr. |

Make a powder and divide into ten doses, one to be taken three times a day.

Naphtalin is a crystalline body forming colorless, resplendent scales; it tastes pungent, is insoluble in water, but sparingly soluble in cold alcohol and fatty oil, but readily if these agents are heated. The solution in oil and the ointments should be made to contain ten per cent. of naphtalin, which must be added to the warm fatty matter. Melting point 176° F., boiling point 424·4°.

*Naphtol* $=\beta$ naphtol, isonaphtol, $C_{10}H_7OH$.—As a substitute for tar preparations, naphtol has been applied to the skin with very good results, especially in psoriasis and other chronic affections. A two to five per cent. solution in alcohol is the usual form of application, but it can also be made up into ointment containing three to twenty-five per cent. Internal administration of this compound was attended with toxic effects, and has, therefore, been discontinued.

It crystallizes in resplendent scales, has an aromatic odor, is slightly soluble in hot water, readily so in alcohol and fatty oil. A very good ointment may be made by adding one part of naphtol to ten of melted lard and well stirring. The substance dissolves without much difficulty and forms a white, smooth product.

Naphtol melts at 253°, and boils at 546·8°.

It should not be confounded with naphtalin.

*Salol*, phenylether of salicylic acid, $C_6H_4OH.COO.C_6H_5$. This remedy appears to give the greatest promise of future importance, for in the short time that it has been known, it has done very good service as a febrifuge and an anti-rheumatic, being administered in doses of fifteen to thirty grains two or three times a day, as also as a gargle ℥ij. thus—

| | |
|---|---|
| Salol | ℥ ij. |
| Spirit. vin | ℥ iv. |

A teaspoonful to a glass of warm water for stomatitis and ulcerations of the mouth and pharynx.

A salol mouthwash is also very much recommended, and may be prepared as follows:—

Take of salol gr. 40, dissolve in ℥iv. of a suitable spirituous dentifrice liquid. Half a teaspoonful to be used in a glass of water, with which it forms a milky emulsion.

For chronic forms of diphtheria, it is reported to have more powerful effect than solutions of chlorate of potassium or salicylic acid. It is also applied, worked up with butter of cacao into pencils, as an antiseptic. These are prepared in a similar manner to those of betol before mentioned.

Salol is a white crystalline powder of a mild aromatic odor; it is insoluble in water, but soluble in alcohol. The melting point is 108° F.

*Thallin* $C_9H_{10}N(OCH_3)$.—Thallin is employed either as sulphate or tartrate. It is rapidly obtaining a recognized position in the materia

medica, for it is a reliable and powerful antipyretic, applicable in all kinds of febrile conditions. Three to eight grains in pill are considered a suitable dose. It is also applied externally, especially lately, with great success for injections in cases of acute and chronic gonorrhœa, for which it is prescribed in aqueous solutions containing one drachm of the thallin salt in ℥vj.

Salts of thallin are crystalline powders, not quite pure white in color, of a bitter and intensely aromatic taste, and of a peculiarly persistent odor, which is similar to that of cumarin; they are readily soluble in water, but far less so in alcohol.

*Urethan.*—Ethyl of urethan, $CO(NH_2).OC_2H_5$. As a mild hypnotic urethan is very useful, being administered in doses of fifteen to forty grains, either as a powder or in solution, with a little syrup as a corrective. Thus—

| | |
|---|---|
| Urethan | ℥ ij. |
| Syr simpl | ℥ j. |
| Aquæ | ℥ iij. |

Two tablespoonfuls for a dose.

It not does produce a comatose condition like chloral-hydrate, but tends to induce a healthy natural sleep in cases where this is impeded by other causes.

It is a crystalline body of a mild ethereal odor, tastes somewhat like saltpetre, is soluble in water and alcohol, and melts at about 120° F.

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## CASCARA SAGRADA.

By Dr. E. R. Squibb.

Rhamnus Purshiana is a sub-variety of the Buckthorn family of small trees and shrubs, which grow in most of the temperate climates. This sub-variety grows abundantly in California and Oregon, and the bark under the name of Chittem bark or cascara sagrada has been long known and used as a purgative, and the name cascara sagrada has more recently been usefully contracted to cascara. Some years ago it was taken up and pushed as a novelty, and by vigorous advertising, as a panacea for numerous ills, it has come into very common use, in the form of several pharmaceutical preparations.

There seems to be no doubt but that the bark of the branches, and a well-made fluid extract, and extract of this bark, are all effective simple aperients, not very disagreeable in taste or effect, easy of

management, and not very liable to lose their effects by continuous use. And a prominent advantage in their use is that the dose may be adjusted in each individual case to any degree of activity or mildness without leaving a persistent reaction.

These peculiar characteristics have long been known as belonging peculiarly to the bark of Rhamnus Frangula, and the use of this both in Europe and this country long antedated the use of cascara sagrada. And this longer and better known variety of the Buckthorn family was admitted to the present revision of the Pharmacopœia, because it was supposed to be the better medicinal agent of the two. Its supposed advantages over cascara are that while having all the advantages of cascara, it is milder, more pleasant and more manageable in effect and more agreeable in taste, and less liable to disturb stomachs and intestines which are sensitive or irritable. When properly used both are simple, mild, agreeable aperients, but the buckthorn the more simple and agreeable of the two, and required in somewhat larger quantities to give the same effect. Hence one or the other is superfluous in the materia medica, and it becomes important to know which should have the preference.

In order to assist in determining which is the better, large quantities of the two barks were carefully selected of uniform good quality, and from these exactly parallel extracts and fluid extracts were made, and have been placed in the hands of many close and careful observers, who are as little prejudiced as may be by the florid advertising, which one of the agents has received. By the parallel observations of many, made independently, it is hoped to obtain useful, if not conclusive, testimony.

Both barks are very plentiful and very cheap, and good qualities are easily obtainable of either at a cost of not more than eight or nine cents per pound by the bale. The buckthorn is much more uniform in quality than the cascara, and the inferior qualities of this, which are offered at five to seven cents per pound, are better than the inferior qualities of cascara at similar prices. Both come long distances, and the freight on the buckthorn from Germany is less than upon cascara from California, and how it is possible to pay freights and two or three profits on them and sell them at such prices, is not easy to comprehend. The very different and inferior bark of the trunks and larger branches are rarely or never seen in buckthorn. But the markets are full of such bark from the cascara, and it is difficult to get even a few bales of the smaller

quill bark which should alone be used. Both barks are said to improve very much in their medicinal qualities by age, and if so, it is reasonable to suppose that the preparations made from them also improve by age, but probably not so much as the barks do. Neither bark should be used until it is over a year old in the dry state, and this condition is more easily secured in the case of buckthorn than cascara.

The menstruum used for exhausting these barks by repercolation is important, and that which the writer has for many years used with buckthorn has been very successful. And there is hardly an instance known wherein the process of repercolation is more important or more successful. In another part of this pamphlet an example is given in detail of the management of buckthorn, and cascara was and is treated in exactly the same way with corresponding results, as far as the process is concerned.

This process gives preparations easily miscible with water, wine or syrup, and therefore easily taken and easily appropriated by the stomach and first passages.—*Ephemeris*, Oct. 1887, page 984.

In the same number of *Ephemeris*, page 1045, Dr. Squibb has an elaborate article of *Fluid Extract of Rhamnus Frangula.* The menstruum is a mixture of 25 per cent. alcohol, 5 per cent. glycerin, and 70 per cent. water. The bark in No. 20 powder is moistened with 75 per cent. of its weight of this menstruum; after maceration for twenty-four hours the bark is brought back to about its original condition of moisture and has swelled to the maximum. It is then sifted and packed firmly and allowed to percolate at the rate of about 60 drops per minute, when the quantity of the dry bark is about two pounds, or a kilogram. The preparation is finished by repercolation, no heat being employed.

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## A SPURIOUS CUBEB.[1]

By William Kirkby, F. R. M. S., *Pharmaceutical Chemist.*

The large extent to which cubebs have been adulterated during the last few years is so well known to every pharmacist that it will hardly be a matter of surprise that I should bring another instance of cubeb substitution under your notice.

In 1885 (*Pharm. Jour.*, [3], xv., 653) I described a false cubeb

[1] Read before the British Pharmaceutical Conference; reprinted from *Phar. Jour. and Trans.*, Sept. 24.

which a little prior to that time had been spoken of as being probably the fruit of *Piper crassipes*. My paper appears to have had the unexpected result of confirming the opinion that such was the source of this drug, although I distinctly pointed out how it differed from the description given in the "Pharmacographia" of a reputed specimen of *P. crassipes:* namely, in *P. crassipes*, having a pedicel from one and a half times to twice as long as the berry, and having a very bitter taste, while the berry described has a pedicel usually about the same length as the fruit, and a taste which cannot be described as very bitter. Instead of referring to this variety therefore as *Piper crassipes* I shall call it the "short-stalked" variety, leaving the identity of it to be determined by an examination of authentic fruits, which I hope to be able to undertake when the necessary material comes to hand.

At the beginning of this year I received from Mr. E. M. Holmes a supply of false berries, more nearly resembling cubebs in certain respects than any previous substitute.

Fig. 1.

Like cubebs they consist of a berry supported on a non-articulated stalk. The globose head is generally flattened on the top, with sometimes a slight elevation at the apex; the base is suddenly contracted into the pedicel, which not infrequently arises from a depression, and is stouter than in the true drug as well as being laterally compressed. In color they vary but little, being of a dark brown tint; they are more or less wrinkled according to the stage of their development. When freshly bruised an abundance of essential oil exudes, having an agreeable camphoraceous odor, reminding one strongly of cajuput; the taste is aromatic, somewhat pungent and bitter. The diameter of the head ranges from four to seven mm., and the length of the stalk from seven to eleven mm., being from one and a half times to twice as long as the berry (fig. 1). In the more fully developed fruits, known by their comparatively smooth skin, the perisperm is seen to be white and starchy.

The pericarp consists of the same number of layers as in cubebs

(fig. 2). In my previous paper the example of other writers[2] was followed in applying the term testa to the inner shell of the pericarp. This I now think to be incorrect, for though there are four distinct layers in the pericarp the testa and the tegmen are found attached to the seed, which is only united to the hard inner shell of the pericarpat its base. It will therefore be seen that the terms used in this paper have not reference to the same parts as in the former one.

The epidermis is composed of small, flattened cells covering an interrupted ring of cubical, sclerotic cells. Within this is the broad layer of loose parenchyma interspersed with larger cells containing oil.

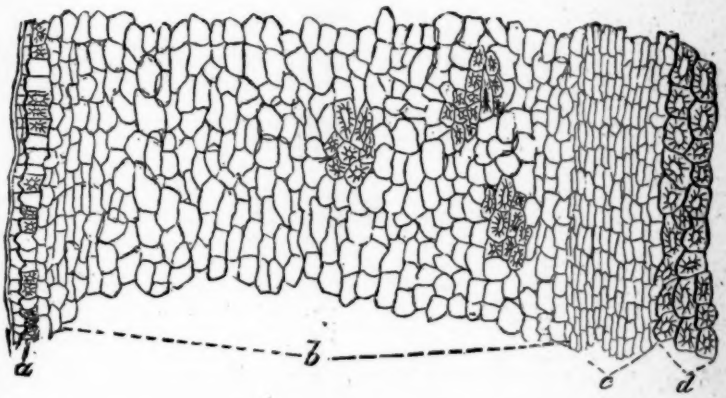


Fig. 2.—Section of pericarp of spurious cubebs × 62. *a*, epidermal layers; *b*, epicarp; *c*, mesocarp; *d*, endocarp.

These latter resist the action of strong sulphuric acid to a greater extent than the surrounding tissue, and the oil is not colored by being left in contact with it. Small groups of stone elements are present in it; also a quantity of starch. The succeeding portion comprises about eight or ten rows of regularly arranged thin walled cells, extended tangentially; it is free from starch, but the inner rows contain small crystals of calcium oxalate. I find that crystals are likewise present in the "short-stalked" drug and in the cubebs; but are much smaller, indeed in cubebs they are almost indistinguishable, hence my failure to discern them before. In both these instances calcium carbonate was found, while but little is present in this specimen.

[2] 'Pharmacographia,' 1874, p. 522.

From this it may be inferred that there is some connection between the two salts. The inner part of the pericarp, found as a hard shell, and described before as the testa, consists of two, or, occassionally, three courses of angular, isodiametrical, sclerotic cells. Between the epicarp and mesocarp are from sixteen to eighteen woody bundles; the xylem is composed of a few spiral vessels, and the phloem of soft bast with one or two fibres. The seed is in structure identical with that of cubebs, the integuments consisting to two membranes, and the perisperm of hexagonal cells, radially elongated, containing an abundance of starch. The starch granules are small, angular, and have a very distinct central hilum. The greater portion of the cells contain a globular starch body, consisting of an agglomeration of starch granules; these are a very characteristic feature (fig. 3). Strong sulphuric acid reveals no specialized cells by any color reaction.

In structure this drug differs from cubebs in having stone elements

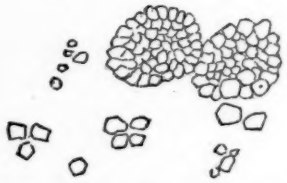

Fig. 3.—Starch of spurious cubebs × 620.

in the epicarp, in having more than four rows of cells in the mesocarp, in the endocarp having isodiametrical stone cells in more than one row and not radially extended, in the larger crystals of calcium oxalate in the mesocarp, in having the round starch bodies in the perisperm, and in the oil giving no color reaction with sulphuric acid. It differs from the "short-stalked" drug in the same particulars with the exception that they both have about the same number of cells in the mesocarp.

In the unground state it may be distinguished from cubebs by its larger size, less wrinkled surface, flattened pedicel, its cajuput odor when bruised, and by giving no carmine color when crushed on a white surface, and treated with strong sulphuric acid. From the "short-stalked" variety it may be known by its longer pedicel, darker color and different odor. In the powder it may be at once recognized by its characteristic starch bodies.

# NAREGAMIA ALATA, THE GOANESE IPECACUANHA.

By David Hooper, F. C. S.

Dr. Dymock, in his "Vegetable Materia Medica of Western India," describes *Naregamia alata*, W. and A., of the natural order of Meliaceæ, as the country ipecacuanha of the Portuguese at Goa, and states that it is the best indigenous emetic he has met with in that part of India. As the drug seems to be devoid of history it was probably unknown in the sixteenth century, when the intelligent and observant Dr. Garcia d'Orta was for thirty years physician to the Viceroy's Court and the hospital at Goa. In confirmation of the recent introduction of naregamia, its use does not appear to have extended far beyond its habitat. The plant grows from the Concan southwards by the Malabar coast to Travancore, preferring the slopes of the Western Ghauts. By the natives in these regions it is used as an emetic, and as a remedy for bile, rheumatism and indigestion, usually in the form of a decoction or infusion. The sample that I have examined was kindly procured for me by Mr. Ferguson, of Calicut; it was collected some nine or ten miles from the town, where it has a reputation in cases of fever, and grows in some abundance.

*Vernacular.*—Kápúr bhendi, pit-wel, tinpana (*Marathi*), trifolio (*Goa*), nelanaringu, nelakanu-gida (*Canarese*).

*Botanical Characters.*—The naregamia plant (of which there is only one known species in India) is a small glabrous or shining undershrub, not more than a foot in height, with several slender, woody, erect or decumbent stems, with few branches. The leaves are from one to four inches long, and trifoliolate. Leaflets, sessile, cuneate-obovate, entire or obtusely lobed, terminal leaflet rather larger than the lateral ones and about the length of the common winged petiole. Peduncles axillary, solitary, one-flowered. The flowers are about one inch long and quite white. Styles yellow. Capsules triangular and three-valved. It is a very attractive plant in the flowering season, which extends from the middle of April to the middle of June.

*Description.*—The drug consists of the root with the slender stems attached to it, the leaves having been stripped off. The root stock is contorted and warty and with the roots is pale brown in color; the mealy suberous layer may essily be removed by rubbing. The stems are of a dirty green, with the bark more firmly adherent. A transverse section of the root exhibits a brown outer layer of bark with a light-colored interior, and a yellowish wood. If the section be touched

with a drop of iodine solution a blue ring will appear in the bark, showing the presence of starch in the librous portion. On account of the hard wood the drug is very difficult to powder in a hand mortar. The activity of the drug resides in the cortical portion, but as this forms one-third, and the woody material two-thirds of the whole, it differs from the true ipecacuanha. The powder is light-brown; it has a peculiar aromatic and pungent odor, and a slightly bitter and nauseous taste.

*Chemical Composition.*—Powdered naregamia was treated both consecutively and independently with the following solvents:—Ether, alcohol, water, diluted acid and diluted alkali. The ether extract contained an *alkaloid,* an *oxidizable fixed oil* and a *wax.*

The alkaloid was separated by agitating the extract with diluted sulphuric acid, and the clear colorless solution at once afforded precipitates by the usual reagents. The alkaloid was left as an amorphous, slightly colored residue of a brittle consistence, on the gentle evaporation of its ethereal solution. It formed crystalline salts with sulphuric, nitric and hydrochloric acids, but gave no satisfactory color reactions when mixed with the concentrated acids. It was precipitated from its solutions by tannin, potassio-mercuric iodide, phosphomolybdate of soda, and iodine. It differs from emetine in readily forming acicular crystals with acids, and by not giving any color with chlorinated lime and acetic acid; and it differs from the principal cinchona alkaloids by its optical inactivity. Having such definite peculiarities in its properties and reactions, I propose to call this alkaloid after the generic name of the plant, *naregamine.*

The fixed oil was soluble in strong spirit, soluble also in dilute caustic soda with a brown and red fluorescent solution. The wax was insoluble in spirit, it was colored brown and afterwards black by sulphuric acid.

The alcoholic extract consisted mainly of *sugar* with some little resinous matter. No tannic substances were detected, but a body precipitable by neutral plumbic acetate, related to an organic acid.

The aqueous extract evaporated to a small bulk, and treated with two volumes of alcohol, gave a precipitate of *gum.* The filtrate from this, evaporated and treated with four volumes of alcohol, caused a precipitate which after standing some hours separated out into large colorless rhombic prisms. A crystalline alkaloidal substance soluble in water, insoluble in strong spirit, having an acid reaction, containing

nitrogen, and occurring in this extract, shows that it is allied to, if not identical with, *asparagine.*

Among the less important constituents of naregamia are *albuminous, pectinous* and *coloring* matters, *starch, cellulose, woody fibre* and *ash.* The starch is in minute rounded granules of about the same size as rice. The ash is of a reddish color, and contained 10 per cent. insoluble in hydrochloric acid.

The following table will show in what amount the various principles occur:—

| | |
|---|---|
| Ether extract | 2·93 |
| Alcoholic extract | 5·40 |
| Aqueous extract | 7·00 |
| Albuminous matter, etc | 7·61 |
| Starch and cellulose | 17·66 |
| Woody fibre | 44·77 |
| Ash | 5·52 |
| Moisture | 9·11 |
| | 100·00 |

*Medical Properties.*—About one ounce of the powdered naregamia was sent to Surgeon-General Bidie, who undertook to have some experiments made on its therapeutic action in the Monegar Choultry Hospital, Madras. I have been favored by Dr. Bidie with the medical report, which contains the following information:—"The powder was tried in two cases of dysentery. The first patient had a very severe attack of the disease, and had recovered from a similar attack only a month before, and was in consequence in a very weak and emaciated state. After three doses, all traces of blood in his motion disappeared. The drug was administered in doses of 20 grains, preceded by 15 minims of tincture of opium. The second patient also recovered rapidly, but the disease was not so severe as in the first case. As an emetic its effects were exactly similar to the officinal drug, 20 grains acting as an effectual emetic in an adult. It was also tried in small doses as an expectorant in catarrhal affections with good results, and was effectual in the treatment of children suffering from bronchitis."

The results of these experiments confirm Dr. Dymock's experience of the emetic property of naregamia, and Dr. Bidie intends to have more extended trials made with it in dysentery and other complaints.

*Pharmacy of Naregamia.*—The "vinum" being a recognized prepa-

ration of the true ipecacuanha, a vinum naregamiæ was made by using sherry containing 15·16 per cent. absolute alcohol by weight, 2·4 per cent. solids, and traces of tannin. The finished product, however, could not be recommended as a suitable preparation, for the following reasons: 1. The wine deposited after standing a few days. 2. Large doses were taken, much in excess of the official wine, without producing an emetic effect. 3. Naregamine is precipitated by tannin, which is frequently found in sherries. 4. Naregamine was detected with facility in the residual marc. If a liquid preparation is required, I should suggest a tincture made with the powdered drug and rectified spirit of the strength of two and a-half ounces to one pint. The alcohol dissolves out the alkaloid and most of the fatty constituents, and the tincture exhibits the activity of the root. Powdered naregamia is the form in which it will chiefly be used; it is conveniently carried about, and is simple in its administration.

OOTACAMUND, INDIA.

—*Phar. Jour. and Trans.*, October 15, 1887, p. 318.

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## TWO SPECIES OF VESICATING BEETLES FROM SOUTH AFRICA.[1]

BY J. OLDHAM BRAITHWAITE, Pharmaceutical Chemist.

A small consignment of native "blistering flies" was recently sent from Cape Colony to Messrs. Hale & Son, the well known drug brokers, by one of their clients there, who states that the beetles are much used by the natives and by local medical practitioners for producing vesication. It was thought possible that they might be usefully introduced here as a substitute for the "Spanish" and "Chinese flies," or as a profitable source of cantharidin. Having casually seen a few specimens, I applied to Messrs. Hale, who were good enough to request me to examine the beetles, and to furnish me with a sufficient quantity for a preliminary investigation.

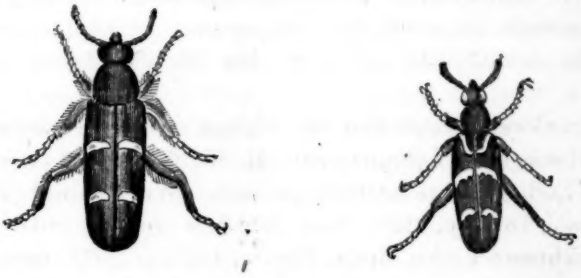
The sample was composed of two species of *Mylabris*, neither of which could I find described in such pharmacological or entomological works as were accessible to me. For the identification of the species I am indebted to Mr. Cahan, of the Entomological Department of the Natural History Museum, who courteously informs me that they are

[1] From a paper read before the Brit. Pharmac. Conference; reprinted from *Phar. Jour. and Trans.*, Sept. 17.

two species of *Mylabris* common in South Africa, *Mylabris bifasciata* and *Mylabris lunata*, and that there appears to be no record of either species, other than technical entomological descriptions. Under these circumstances I have thought that a description would not be without interest from a pharmacological point of view.

It was first necessary to separate the two species, which was easily done; it will be seen from the following figures and description, that they do not very closely resemble each other either in size or markings. It was found that *Mylabris bifasciata* comprised the bulk of the sample, namely, ninety-three per cent. of the whole; the smaller, *M. lunata*, only being seven per cent.

*Mylabris bifasciata* varies in length from 20 to 25 millimetres; the antennæ are about 5 millimetres long, moniliform, consisting of eleven joints, the first two basal joints black, the remainder yellow, gradually



MYLABRIS BIFASCIATA. MYLABRIS LUNATA.

increasing in size from base to apex; the head is gibbous, about 3 mm. in length, eyes prominent; thorax pentagonal, 4 mm. long by 3 mm. wide. Elytra, 15 mm. long, by 5 broad, crustaceous, convex, black, traversed by two undulating dark ochraceous-yellow bands, about 2 mm. in depth; the apical band is bordered by a rufescent margin, and is more rounded at the costal end than the basal band. The tarsi of the first two pairs of legs are five jointed, those of the last pair have four joints.

*Mylabris lunata* varies in length from 14 to 18 millimetres. The antennæ consist of eleven articulations, moniliform, gradually increasing in size from base to apex, the first four basal joints black, the remainder ochraceous-brown. Head gibbous, eyes prominent, thorax equal in length and breadth. Elytra, 13 millimetres long by 4 broad; crustaceous black, traversed by two

transverse sinuous bands, and having a very conspicuous reniform or semilunar spot at the base of each wing case, also another lenticular spot on the under costal basilar margin, which is not visible unless the beetle is turned over on its back. The color of all these markings varies in different individuals, from a dull ochraceous-yellow to a bright lemon-chrome. The tarsi of the first two pairs of legs are five jointed, those of the last pair have four joints.

The next step was to determine if either species were active vesicants, and if so, the proportion in which the blistering principle existed. As the quantity of *Mylabris bifasciata* available was so much greater than that of *M. lunata*, this species was operated on first.

NOTE BY THE EDITOR.—By exhausting the beetles with acetic ether, washing the extract with carbon bisulphide and with a little alcohol, then recrystallizing from chlorofrom, the author obtained 1·02 per cent. of cantharidin. In another experiment, omitting treatment with chloroform, the yield was 1·09 per cent. A sample of Cantharis vesicatoria yielded 0·42 per cent.; but *Mylabris lunata* only 0·296 per cent.

Mr. Braithwaite states that the highest record of cantharidin he could find was from *Lytta aspersa*. R. Wolff reported (*Arch. Phar.*, Jan., 1877) the yield to be 0·855 per cent. We obtained (Proc. Am. Phar. Asso., 1872, p. 258) from *Mylabris cichorii* 1·016 per cent., and L. Fahnestock (AM. JOUR. PHAR., 1879, p. 297), from the same lot of these beetles nearly 1·25 per cent., the increased yield being probably due to the presence of less moisture, and from *Cantharis vittata*, 1·03 per cent. of cantharidin.

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**Preservation of Leeches.**—J. T. writes to the *Chemist and Druggist*, August 6, 1887: "I never give leeches any meat or worms; they are kept in an earthenware vase, which has been in use about fifty years, with glass cover and perforated zinc rim; in the bottom are a few pebbles, and part of an earthenware drainer, through the holes of which the leeches crawl when they require a little help to cast their skins. The ordinary tap-water (off the limestone) with which they are supplied is changed three times a week in summer, and once or twice a week in winter. Loss or complaints are very rare, sometimes not once in six months. I always dry leeches before selling, for two reasons; (1) because they bite more readily, and (2) because the glue of the box is often moistened when they are sent a distance. I should think the weeds, earth, etc., which some advocate, would make it rather difficult to find half a dozen or so.

# SIMPLE SUGGESTIONS FOR THE PURCHASE AND ASSAY OF COMMERCIAL CARBOLIC COMPOUNDS USED FOR SANITARY PURPOSES.[1]

By John Muter, F.R.S.E., F.I.C., and L. De Koningh, F.I.C.

Owing to the extensive use of these compounds by the various local sanitary authorities throughout the country, and the occasional demands on the official analyst for their valuation, it is very desirable, both in the interests of the producers and the consumers, that there should be some simple and definite methods agreed upon for their analysis. Up till the present time we venture to think that if the same sample were sent to any dozen analysts, taken by chance all over Great Britain, not more than two or three would come within measurable distance of each other in the percentage of carbolic acid found, while it is more than probable that the manufacturer's chemist would disagree with all. This state of things is caused:

(1) By the fact that, very probably, nearly all the operators would employ a process of their own devising, and that, although most would work upon similar lines, yet the details would be so different as to cause a very wide divergence in the finished results.

(2) By the fact that, in commercial mixtures of carbolic acid and the higher phenols, the commonly adopted methods come entirely to grief.

The process of Koppeschaar (although we continually meet with some one who has modified it so as to render it perfect) is totally unreliable for commercial use, because it is full of pit-falls. For example, to begin with, we have the necessity of working on such small quantities that any experimental error is multiplied by something like 1000; and then, as we are really to a great extent precipitating cresol and calculating it as phenol, we cannot on the face of such a fact expect much truth in the result. This is not, however, all because the process is not to be depended upon even when dealing with pure medicinal acid. One may set to work to make a series of test experiments, and may theorise that, if it can only be arranged so that we work with the same excess of bromine and for the same time, we are bound to get concordant results. If any one has succeeded in really carrying such reasonable theory into practice without meeting with some unaccountable differences in the very first long series of experiments, then he has been much more lucky than we have ever been,

[1] Abstract of a paper published in *The Analyst*, October, 1887.

and, so far as we know, we have tried every published modification, besides those resulting from our own experiments.

Another thing which tends to lead to much dissatisfaction in such matters is the tendency of local authorities to contract wildly for powders or liquids "containing (say) fifteen per cent. carbolic acid," without getting their medical officer to ask the analyst whether such an article really exists in commerce. The manufacturer takes such a contract with a light heart, because he knows he can practically put in an acid as tarry and weak as he likes, and argue (if challenged) that he really put in fifteen per cent. of "commercial" carbolic acid, and bring reliable witnesses, if needful, to prove they saw it done. Meantime the powder is complained of and sent to the analyst, who is asked to state the percentage of carbolic acid. He does this according to his lights, and naturally takes the words of the contract as literal, and reports the amount of *real phenol* he finds. This being generally microscopic, the authority becomes indignant, and the manufacturer, in defending himself as above shown, hints that the analyst is incompetent, and generally gets one or two persons on the local board to believe him. If, in such matters, the boards could be induced to consult their analyst before issuing the form of tender, they would then learn that words like those we have above commented upon are absolutely useless in such cases, and that it is ridiculous to ask for a thing which never could be supplied in practice within any reasonable limit of cost.

It may be now taken as a tolerably well admitted fact that, setting aside the necessities of surgery and medicine, the cresol and other higher phenols are just as good for ordinary antiseptic purposes as real carbolic acid itself, and that unless the presence of such congeners be permitted, the cost of disinfectants of this class would be quite prohibitory. It is therefore sufficient that the analyst should see that his board is being supplied with an article which is all made up of mixed phenols, and not with tar oils, containing only a small proportion of such bodies.

There is nothing more involved in the processes than the following well-known data:—

(1) Phenol, cresol, and their homologues are completely soluble when shaken up with a five per cent. solution of sodium hydrate.

(2) Liquefied phenol and the corresponding cresol are insoluble in a saturated solution of sodium chloride.

(3) In the presence of a sufficient excess of alkali, even a largely diluted solution may be boiled down without the slightest appreciable loss of phenol or cresol.

(4) Tar oils and naphthalin are only very slightly dissolved by the alkali, and may be perfectly removed from the solution by agitating it with benzol.

Taking these ascertained facts, we apply them in the following manner, taking each case in turn:—

### (1) PROCESS FOR THE VALUATION OF A CARBOLIC POWDER IN WHICH THE BASE IS NOT LIME, AND THE PHENOLS ARE CONSEQUENTLY NOT IN COMBINATION.

Weigh out 100 grammes of the powder, and transfer the same to a flask, and add 400 cc. of methylated spirit; then, having introduced a well-fitting cork, agitate for a minute or two at intervals during an hour, and finally set the whole aside to settle. When subsidence is complete, pour or filter off 300 cc. of the supernatant liquid, which thus represents 75 grammes of the original powder actually taken for analysis. Here it may be noted that in laboratories fitted with the specially large "Soxhlet" apparatus required, a more rapid and economical method is to mix the original powder with bran, and to extract it in such an apparatus, with just sufficient spirit to do the necessary work.

To the spirituous extract of the powder, obtained as above described, 200 cc. of 5 per cent. solution of sodium hydrate are now added, and the mixed liquids are evaporated to about half their bulk. At this point any tar-oils or naphthalin present will separate out, and are to be removed by filtration. The filtrate, freed from these impurities, is now evaporated down to a bulk not exceeding 50 cc., and transferred to a specially constructed measuring tube surrounded by cold water, the basin being rinsed out with water, so that the entire amount of fluid in the tube shall be exactly 65 cc. The tube employed is of peculiar form, capable of holding over 110 cc. and is specially graduated and stoppered. It is wide at the base, and is narrowed at 65 cc. from the bottom to such a diameter as to show, when graduated, ·25 of a cc. The first graduation is at 20 cc. from the bottom, the second at 65 cc., and then the delicate graduations (in ·25 of a cc.) commence and continue for 45 cc. more up to 110 cc. The tube is furnished with a long stirring rod made as thin as possible, and projecting above

the tube to a convenient extent. [These tubes are to be procured from Mr. Cetti of Brooke street, Holborn, who knows them as "Muter's carbolimeters," and the entire apparatus costs 8s. 6d.] Before proceeding to use the tube for the first time, it is necessary to find the allowance to be made for the rod. This is done by filling the tube with brine up to the 75 cc. mark and then pouring in liquefied carbolic acid up to the 85 cc. mark. The rod is now introduced and the amount of displacement it causes noted, so that an equivalent allowance may be made on all future experiments.

The measuring tube having been charged, as already described, we now proceed to add very cautiously, and with constant stirring 25 cc. of strong hydrochloric acid, and when that is all in, we follow it with a teaspoonful of common salt. All the phenols now rise to the surface, and when the whole is at the temperature of 60°F., the volume is read off, which gives the amount of commercial carbolic acid present in the 75 grammes of powder. If a perfectly acurate result be required, it is necessary to remove some of the floating acid with a pipette, take its specific gravity, and correct the volume reading to weight.

(2) MODIFICATION OF THE ABOVE PROCESS FOR USE WITH POWDERS ON A LIME BASE, WHERE THE ACIDS ARE COMBINED.

Before proceeding with the spirit extraction, the weighed portion of the powder is to be treated in a capacious mortar with successive small quantities of diluted sulphuric acid (one in three) until the whole mass has a faintly acid reaction, and then the process applied as above described. It is necessary to be very particular about the treatment in the mortar, because, if the least particle of the powder escapes the action of the acid, the results are vitiated, while at the same time, any marked excess of acid should be avoided. Both pestle and spatula must be thoroughly used.

(3) EXAMINATION OF A SAMPLE OF COMMERCIAL CARBOLIC ACID.

*Case* 1. *The sample is dark in color.*—Put some of the sample into the "carbolimeter" up to the 20 cc. mark, then gently add 5 per cent. solution of sodium hydrate up to the 100 cc. mark, and lastly add 10 cc. of benzol. Put in the stopper, and having inverted the tube once or twice, plunge it into cold water. Repeat this shaking and cooling until the separation is complete. Read off the volume of the dark layer, which will now have formed beneath the 100 cc. mark,

and the amount of this will give the tar-oils, etc., present in the sample. Provided there is no excess of water, this amount is deducted from 20 cc., and the difference multiplied by five gives the percentage strength of the sample. Excess of water (which is of very rare occurrence) is best ascertained by adding some of the sample to three times its volume of benzol, when it should dissolve quite clear if there be no such excess.

*Case* 2. *The sample is not darker than pale sherry.*—Try if it dissolves nearly clear in four times its volume of 5 per cent. solution of sodium hydrate, and if so, it may be taken as practically free from tar-oils. If not, treat it as above, using however, only a very small fixed volume of the benzol. This acid is apt to contain excess of water, which must be estimated by shaking 20 cc. of the sample in the "carbolimeter" with 80 cc. of saturated solution of sodium chloride, and observing the diminution in volume that will take place if such excess be present.

A fair idea as to whether the acid is chiefly phenol or cresol may always be obtained by applying the bromine reaction, and observing the nature of the precipitate.

### (4) EXAMINATION OF A SAMPLE OF PURE CARBOLIC ACID IN THE LIQUEFIED FORM.

In examining samples of this acid, specific gravity practically goes for nothing. The points to determine are:—(1) That it should entirely dissolve to a perfectly clear solution in four times its volume of 5 per cent. solution of sodium hydrate; (2) That, when shaken with an excess of saturated solution of sodium chloride, as already described, it suffers no diminution in volume; (3) When treated with bromine water in excess it gives a fine curdy precipitate, not at all inclined to stick to the tube.

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**Photoxylin,** a substance in use among photographers, was recommended some time ago by Dr. Krysinski as a suitable material for mounting microscopic specimens, and more recently still it has been utilized by Professor Wahl, of St. Petersburg (*Lancet*, June 18, 1887), in surgical practice. A five per cent solution in equal parts of alcohol and ether he finds preferable to collodion, as it adheres more firmly to the skin, not being so easily rubbed off in washing. It is absolutely impervious to liquids, and exerts a perfectly even compression on the tissues.[1]

1 Gun cotton soluble in a mixture of equal parts of alcohol and ether.—EDITOR.

## VARIETIES.

*Iodoform Wicking.*—Gersung, of Vienna, has found wicking impregnated with iodoform, an excellent material for tampons in the drainage of wounds whose secretion is moderate; in Billroth's clinic wicking saturated with tannin and iodoform is used with excellent results. Its removal is much less painful and inconvenient than that of gauze.—*Centralblatt für Chirurgie; Med. News*, September 24, 1887.

*Inhalation for Acute Coryza.*—Fritsche, of Berlin, has found the following useful:

℞.—Acid. acetic. glacial
Acid. carbolic.....aa... gr. xxx
Mixt. oleoso-balsam..... ʒ ij
Tr. moschi..... ♏ xv
M.

Fifty drops of this may be put upon cotton and enclosed in a convenient flask. Inhalations, at first every half hour, and later at longer intervals for ten minutes, will be found beneficial.—*Berliner klinische Wochenschrift: Med. News*, August 20, 1887.

*Arseniate of Lithium* is recommended by Dr. Martineau, in diabetes in the following form: carbonate of lithium, 3 grs.; arseniate of sodium, $\frac{1}{10}$ gr.; carbonic acid water, 2 pints. Solution is effected under pressure. The effervescing liquid is taken mixed with claret, the foregoing dose to last for at least three days, being taken at the two principal meals of the day customary in Paris. No change of diet is necessary. Dujardin-Beaumetz and others are skeptical about the value of this treatment, but it is simple and easy, and when the patient is not dangerously ill, it will do no harm to try it.—*Technics.*

*Cyanide of Mercury in the Treatment of Diphtheria.*—Bree (*Inaug. Dissert; N. Y. Med. Jour.*, July 23, 1887), reports 318 cases of diphtheria treated with mercury cyanide, with only four deaths. At the outset he gives from two to three drops of a 1-to-1000 solution in alcohol, every four hours, afterward diminishing the dose progressively. The remedy is said to oppose the extension of the morbid process and to ameliorate the subjective symptoms. In the course of a night, a threatening case has been so mitigated as to come to an end in three days. Thus involvement of the larynx or the nasal passages and the occurrence of sequelæ are prevented with almost absolute certainty, and the convalescence is shortened.

*Colorless Tincture of Iodine.*—The *Medical Press* publishes the following formula: Iodide of ammonium, ʒij; iodoform, ʒss; ammonia water, ʒss; alcohol, ℥iijss. The mixture should be left exposed to the light eight or ten days, when all trace of color is gone.

*Fluid Extract of Quebracho* is claimed by Bourdeaux (*Arch. Méd. Belges*), to be a useful application to burns, ulcers and frost-bites; it dries in the course of half an hour, forming a tough and very adhesive brownish crust, which can be removed only with the aid of warm water; and cicatrization advances rapidly.

# MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, Oc ober 18, 1887.

The meeting was called to order by the Registrar, and Mr. A. P. Brown was asked to preside. The reading of the minutes of the last meeting was dispensed with.

*Donations to the Cabinet and Library*:—The Actuary stated that he had placed in his hands by Miss Williamson, daughter of the late Peter Williamson, the certificate of his membership in the Philadelphia College of Apothecaries, the institution out of which grew our College of Pharmacy. This certificate is especially interesting, as being probably the only one in existence of that early date (October 5, 1821), and as having belonged to him who was the first Secretary of the Board of Trustees of this College, and who had shown so much interest in its welfare. It was accompanied with four volumes, *viz*, James' Dispensatory, 1742; Quincy's Dispensatory, 1782; London Dispensatory, 1826; Nicholson's Dictionary of Chemistry, 1808. The meeting directed the thanks of the College to be returned by the Registrar.

The Actuary presented, on behalf of Mr. H. A. Zug, four very handsome specimens of *coral*. Mr. Zug was formerly one of the Inspectors in the Custom House, and seeing frequent opportunities for purchasing such articles, made quite a fine collection of them, of which these are among the finest he had. Professor Maisch suggested that the correct scientific names of these specimens be ascertained through the Academy of Natural Sciences.

The Curator, Mr. Jos. W. England, presented on behalf of Mr. R. A. Hance, to the College Cabinet, 214 specimens of *fluid extracts*, all the officinal and a very large number of non-officinal; also a number of *solid extracts* from the laboratory of Messrs. McKeown, Bower and Ellis, of this city. Mr. England also exhibited a sample of *albolin*, a mild, white, odorless, non-rancidifying solid, melting between 110° and 130° F. It is made by McKesson & Robbins, of New York. Albolin is entirely destitute of odor and taste; and as its melting point is from six to twenty-six degrees Fahrenheit higher than the officinal petrolatum, it seems to be a purified or white petrolatum with a certain amount of paraffin melted with it. The makers define it to be a carefully refined product from a peculiar kind of petroleum, possessing properties which recommend it for various medicinal, pharmaceutical and toilet purposes.

A paper on *Linimentum Ammoniæ* was read by Mr. Jos. W. England. The reading of the paper elicited a good deal of discussion, particularly as regards the liniment when made with linseed oil and mixtures containing it. Mr. England stated that he had made *linseed oil* with bisulphide of carbon, but that it required ten parts of absolute alcohol to dissolve it. Prof. Maisch asked if the oil had been made from seed ground by Mr. England, or from flaxseed meal as purchased. The commercial meal had been used. It is well known that the oil changes rapidly in ground seeds, especially flaxseed, this oil being of the class called drying oils. Mr. Moerk said that linseed oil made from freshly ground seed, with petroleum spirit of light gravity, required but five parts of absolute alcohol, and that from carbon bisulphide required about ten parts. Prof. Maisch stated that the yield of cold pressed flaxseed oil, as expressed by the late Fred. L. John, amounted to only about ten or twelve per cent.; a sample obtained from Mr. John many years ago was soluble in five parts of

absolute alcohol. At present, with the use of improved machinery, about 18 or 20 per cent. of oil was obtained by cold pressure, but whether this was wholly soluble in the same amount of alcohol, he had not ascertained. The total yield by hot pressure is from twenty-eight to thirty per cent. Mr. Thompson wished to know how cold pressed oil might be discriminated from that made by heat and pressure. It was stated that the former could be recognized by the alcohol test before alluded to, and by the mild odor and bland taste which are quite different from that made by heat and pressure. Mr. Thompson said the whole tenor of the paper just read and the consequent discussion showed that it was quite important that *linimentum ammoniæ* and similar preparations should be prepared extemporaneously for present need only. The registrar moved that the subject of linseed oil, cold and hot pressed, be referred to a committee of three, and it was recommended that Dr. A. W. Miller be placed on the committee, he having had a great deal of experience with oils; some years ago he had presented samples of cold-pressed linseed oil. It was mentioned that such an oil had great advantages over the ordinary flax-seed oil used by painters; and the registrar stated that he had been informed by veterinary surgeons that the cold pressed oil was the only article fit for use in their practice. The chair appointed on the committee Dr. Miller, and Messrs. Thompson and England. The paper of Mr. England was referred to the Committee on Publication.

Mr. C. S. Gallaher read a paper upon a *Crystalline Principle from Cimicifuga*, showing that crystals could be obtained, and the tests demonstrated them to be cane sugar. The paper was referred to the Committee on Publication.

Mr. F. X. Moerk read a paper upon a *Cancer Cure*. Prof. Maisch alluded to the large amount of arsenic found in this cure, which seems to have originated in Easton, Pa.; and read a letter from Dr Pursell, of Bristol, Pa., giving the history of several cures of epithelioma which had come under his notice. The paper was referred to the committee.

Dr. C. B. Lowe alluded to the late Exhibition of the Horticultural Society, and called special attention to the crotons, which are of the same genus from which croton oil is obtained; the display of plants of the family of Maranta was also quite large, and the leaves were often marked in a peculiar manner, as though they had photographs upon them; a fine specimen of the Lotus plant was exhibited; also several species of Nepenthes and some leaves of the Victoria regia, about four and one-half feet in diameter, showing both upper and lower sides. Professor Maisch stated that the genus *Croton* comprised over four hundred different species, many of which were under cultivation; the handsomest display of crotons he had ever seen was ten years ago, in the Lieutenant-Governor's gardens at Toronto, where quite a number of different species were grown, many of them with beautifully variegated foliage.

Professor Maisch also exhibited a sample of *sarsaparilla*, from Messrs. Wm. R. Warner & Co., which had been offered as the Honduras variety, but really was a handsome specimen of Mexican, and it is evident that it was packed in the locality where it grew, as the binding root must have been fresh when put on; as far as could be seen it was free from the rhizome and portions of stem which usually accompany the Mexican variety. Another curiosity in the shape of a root was a sample of *mandragora* roots, three in number, which had considerable likeness to the human form; it was highly esteemed

in former times in southern Europe, for supposed medicinal virtues, as was the ginseng of the Chinese, which sold at fabulous prices.

Mr. A. P. Brown exhibited a *Chinese medicine* put up by a Chinese druggist, according to a prescription; the medicine consisted of herbs, barks and portions of a lizard, all in coarse and very irregular fragments, and was used as a preventive and also as a cure for gonorrhœa.

Prof. Trimble showed a pair of *lizards*, as prepared by the Chinese for medicinal purposes, brought from San Francisco by Dr. Charles Schaffer, of this city; they are recommended for use to those who desire to have large families!!! The name, as nearly as could be ascertained by the Doctor, is cup-guy.[1]

It was recommended that hereafter the museum be thrown open at an early hour, so that the students could remain from the quizzes till the meeting commenced.

There being no further business, a motion to adjourn was carried.

T. S. WIEGAND, Registrar.

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## EDITORIAL DEPARTMENT.

*The last of stenocarpine or gleditschine.*—After the editorial article, which appeared in our October number on pages 541 to 543, had been written, we observed that in several journals the name of the suspicious alkaloid had been changed from stenocarpine to gleditschine, and that the source of it was stated to be Gleditschia triacanthos, *Lin.* But we did not think it necessary to refer to this species, since, thereby, the doubtful character of the source was by no means cleared up, even if the tree should grow in Louisiana as plentifully as the legend of the discovery of the anæsthetic effects of the leaves would indicate.

The source of that wonderful alkaloid has at last been discovered, or rather unravelled, for we learn from Messrs. Parke, Davis & Co., that an investigation, at their laboratory, of a solution purporting to be a 2 per cent. solution of gleditschine or stenocarpine, which was supplied by Messrs. Lehn & Fink, of New York, has developed the fact that this solution, with which the experiments thus far recorded have been made, contains 6 per cent. of *cocaine* and a sulphate of a salt which further experiments is likely to prove to be atropine.

F. A. Thompson, Ph.C., also reports, after careful experiment with the leaves of Gleditschia triacanthos, from which gleditschine or stenocarpine is claimed to have been derived, that they contain only an infinitesimal per-

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[1] Mr. Stewart Culin, of Philadelphia, has kindly informed us that in the dialect of Canton, these lizards are called *kop kai*, and at Pekin *koh kiai*, and that in China they are commonly thought to be a transformation of a swallow. They are extensively used by the Chinese practitioners here, the surface of the lizard being carefully scraped and the head removed, the remainder being minced and then made into a tea, usually with other drugs; they are regarded as a strengthening medicine and as an aphrodisiæ, and are sold at from 40 to 50 cents per pair.—EDITOR.

centage of an amorphous alkaloid devoid of anæsthetic or mydriatic properties.

In addition to this it should be mentioned that a small quantity of the leaves have also been experimented with by Dr. B. H. Paul and A. J. Cownley, who report in the *Phar. Jour. and Trans.*, October 15, that they did not succeed in isolating from them any alkaloid, or obtaining from them a principle producing a numbing sensation like that caused by cocaine; and they come to the conclusion that, most probably, stenocarpine is a myth.

In the light of these facts it seems more than probable that the stenocarpine sensation should be classed with the hopeine fraud of malodorous memory, and that the physicians who have already published reports regarding gleditschine or stenocarpine have been the victims of a thinly disguised hoax.

*The Mutual Relations of Physician and Pharmacist* is the subject, for the best essay on which the *Pharmaceutical Era*, Detroit, offers a prize of $50 in gold. The essay must not exceed 2000 words in length, and must reach the publishers on or before January 1st. next, the author's name to be enclosed with the manuscript on separate paper. All essays submitted are to be the property of the journal named, and to be published or not at the discretion of the editor. The essays will be submitted, anonymously, for the awarding of the prize, to a committee of five physicians and pharmacists. Anyone interested in the subject may compete for the prize.

*The Pharmaceutical Examining Board for the State of Pennsylvania*, announce that the ninety days allowed by the new pharmacy law for registration without examination, expire on November 18th, and that the Board has no power to extend the time. The secretary of the Board is H. B. Cochran, Lancaster, Pa.

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## REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*A Manual of Materia Medica*, being a Guide to Materia Medica of the Vegetable and Animal Kingdoms; for the use of Students, Druggists, Pharmacists and Physicians. By John M. Maisch, *Phar. D.* etc. Third edition, with 257 illustrations. Philadelphia: Lea Brothers & Co., 1887. 12mo. Pp. 532.

For somewhat detailed reviews of the two preceding editions we refer our readers to the AMER. JOUR. PHAR., 1882, p. 39, and 1885, p. 55; and in announcing the appearance of the third edition, merely quote from the preface the following which, in a measure, will show in what respects it differs from the previous ones: "The general arrangement, having proved its convenience and usefulness, has been left undisturbed; but the text has been carefully scrutinized, and wherever it seemed necessary or desirable, has been rendered more precise in the description of the physical and structural characteristics. New investigations, as far as they fall within the scope of the work, have been noted with more or less minute detail as their importance seemed to require, and fifteen new illustrations have been added. The number of indigenous plants which are locally employed for medicinal

purposes is very considerable; but, after much inquiry, few, if any, not previously noticed in the Manual, appear to enjoy a sufficiently extended use for admission, though several of the older remedies described may perhaps be of no greater general importance. New remedies of vegetable origin are frequently of an ephemeral character, failing to acquire an extensive application in medicine, or importance as articles of commerce. Owing to such considerations only a small number of drugs, like kava root, mallow flowers, ajowan fruit, the seeds of chaulmugra, cola and kombé, and lanolin, have been deemed of sufficient consequence for description in a manner similar to that adopted for pharmacopœial drugs; but an additional number has been noticed in connection with other drugs, for which they may be mistaken, like waras with kamala, mangosteen with bael, etc."

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*The Principles of Theoretical Chemistry, with special reference to the Constitution of Chemical Compounds.* By Ira Remsen, Professor of Chemistry in the Johns Hopkins University. Third edition; enlarged and thoroughly revised. Philadelphia: Lea Brothers & Co., 1887, 12mo. pp. 318.

On the appearance of the first and second editions of this work in 1877 and 1883, we have commented on its excellence as a guide into the study of theoretical chemistry, and the same verdict must be given now that the third edition is before us, modified in various ways and considerably enlarged. Besides the new additions and modifications which are noticeable throughout the book, we observe a new introductory chapter, several chapters on matters pertaining to the subject of chemical affinity, and the chapter on valence, which has been rewritten and enlarged.

The value of theoretical chemistry is not a doubtful question; many of the most important discoveries have resulted from investigations into the constitution of chemical compounds, or as it is also expressed, into their structure. But numerous relations are still involved in uncertainty, and many patient investigations will be required before more light is thrown on such questions, when discoveries may be expected equal in importance to those that have resulted from the elaboration of theories, now pretty generally recognized. That the study of theoretical chemistry in the United States is being regarded with more favor than formerly, is a gratifying evidence of scientific progress, and in this sphere Professor Remsen's valuable work, we believe, has exerted a very salutary influence.

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*The Physician's Visiting List for* 1888. Philadelphia: P. Blakiston, Son & Co. Price, for twenty-five patients per day or week, $1; or interleaved, $1.25.

This is the thirty-seventh year of its publication. As usual, the preliminary matter is well selected and conveniently arranged for reference. Larger sizes of this visiting list arranged for 50, 75 and 100 patients are likewise published.

*China in America:* A study in the social life of the Chinese in the eastern cities of the United States. By Stewart Culin, Philadelphia, 1887, pp. 16.

This interesting essay was read before the Section of Anthropology, American Association for the Advancement of Science, and is embellished with a fac-simile reproduction of a Chinese map of the Province of Kwantung, from two departments of which the Chinese laborers in the United States come.

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The following reprints have been received:

*The Estimation of Quinine by Kerner's Method.* By E. A. Ruddiman, Ph.C.

A contribution from the School of Pharmacy of the University of Michigan; reprint from *The Pharmaceutical Era.*

*Is an Apprentice in a Drug Store entitled to Receive Instruction in Practical Pharmacy from his Employer?* By Ottmar Eberbach.

From Proceedings of the Michigan State Pharmaceutical Association.

*The Cultivation of Cinchona in Bolivia.* By H. H. Rusby, M.D.

From *Pharmaceutical Record.* The paper was read before the American Association for the Advancement of Science.

*The Chemistry of Nitrogen Disclosed in the Constitution of the Alkaloids.* By Prof. A. B. Prescott.

From Proceedings of the American Association for the Advancement of Science. This is an address made before the Section of Chemistry.

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## OBITUARY.

*Spencer Fullerton Baird, L.L.D.*, died at Woods Hall, Mass., August 19. He was born at Reading, Pa., February 3, 1823, was educated at Dickinson College, in 1846 became Professor of Natural Sciences in that institution, in 1850 was appointed assistant secretary of the Smithsonian Institution, and after the death of Prof. Henry succeeded him as secretary of the institution and Director of the National Museum. He was the author of a number of works and of numerous papers on the fauna of North America.

*Max Flückiger, M.D.*, son of Professor F. A. Flückiger, died suddenly in Strassburg, September 24. The deceased who was born in Bern, Switzerland, February 13, 1861, was an accomplished student, with the prospects before him of a bright career of usefulness.

*Seth Caleb Johnson, Ph.G.* Philadelphia College of Pharmacy, class 1886, died at Absecon, N. J., October 1st, at the age of 31 years.